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MENTAL SPACIOUSNESS.

ON the whole, the prevailing opinion in modern philosophy has been that minds are in time but not in space. This belief, to be sure, is held on very different grounds, and it is often denied—again for many reasons. Those who accept it, for example, include M. Bergson who considers space to be illusory and time indefeasibly real, together with the ordinary dualist (and perhaps the ordinary psychologist) who has no doubts about the reality either of time or of space. Those who reject it, on the other hand, include Spinoza who believed that time was only a prop to the imagination although he accepted the full reality of the attribute of extension and completely excluded the attribute of thought from it; and they also include Mr. Bradley and his friends who deny the reality of time and space and, for that matter, of personality itself. It is only in quite recent times, however, that modern philosophers, other than avowed materialists, have maintained, seriously and literally, that minds are spatial as well as temporal.

Now philosophers are accustomed to impute motives to one another, perhaps because manners are relative, perhaps because truth is unmannerly; and so we need not be surprised to find that those who believe that their minds are spatial are apt to twit their opponents with sinister or sentimental designs. The spaciousness of mind, we are told, is the belief of all sensible and unsophisticated men (these adjectives seem to be equivalent for argumentative

purposes); and, consequently, those who deny it are the dupes of their moral prejudices or of their mystical leanings. In a word, they seek a short road to the immortality of the soul by denying to minds, perversely and arbitrarily, the most fundamental property of material things. It would be possible to argue, no doubt, that *even if* minds were unextended, the moral and theological consequences which are frequently drawn from this supposed circumstance are exceedingly disputable in fact. The soul, for example, would not necessarily be immortal (even in the sense of "natural" immortality) simply because it is indivisible; for an indivisible thing might be extinguished although it could not be divided. Moreover, a temporal soul is at least temporally divisible; and Time is the greatest of all dividers. Although these arguments are possible, however, they are less effective than the simple denial that a mind is anything other than a spatial partner in spatial relations. In that case, it is the other party's turn to seek for recondite arguments which inspire but faint conviction. It is possible, to be sure, that a spatial mind might be indivisible and indestructible, since, for aught we can tell, it might be allied with a "spiritual" body (or an aura) in the brain which is impervious to the assaults of gross corruption; but these speculations suggest special pleading.

There is no need to raise these issues, however, or to impute motives. Immortality is not a logical consequence of the immateriality of the soul, and it is not impossible even if the soul were material. As a matter of fact most professing Christians are really Christian materialists, and I do not see why they should not be. They clutch at any straws they can find in the way of physical survival, and they are dissatisfied unless they can find ocular and even photographic evidence of the continuance of a man's wraith. In a word, the speculative belief in the soul's immortality has very little connection with the speculative belief in its

immateriality, and, for the rest, the Christian materialists, if they were frank, could argue their case very easily. If virtue is an excellent thing, virtuous matter, surely, cannot be less excellent. If beauty throbs with deity, so must material beauty. If the universe, transfigured to the eye of faith, is divined to be the bearer of permanent values, it could not bear these values less readily if they were the values of matter. To put the argument otherwise, if only the immaterial can be valuable, then, because there are values, there must certainly be immaterial things. If not, valuable things may be material, and, for that matter, material things may have all the values which Christians discern in the world.

The spaciousness of the mind, however, is simpler and more general than its materiality, and I am asking the reader to consider this simpler problem. Even so, the problem is intricate enough, as recent discussions have shown. A generation ago, the mind's spaciousness would have seemed an intelligible phrase, needing little explanation, and its spaceless existence in time, if a subtler idea, would have seemed readily comprehensible with a very little philosophy. To-day it is different. We are coming, more and more, to put motion, or space-time in the place of space *and* time; and we have come, at long last, to accept Berkeley's distinction of *tactual* from other spaces with the seriousness which is due to it, both on the part of a physics that is resolutely empirical and on the part of a metaphysics which is enlightened enough to criticize the ready-made speculations of common-sense theory. For these, if for no other, reasons it is becoming immensely more difficult to say with accuracy what must be meant either by a spacious or by a spaceless existence in time.

On the first of these points I shall be brief. We must admit, I think, that the physical world is really a system of motions, a continuum of point-instants in Mr. Alex-

ander's language or an infinite mode of motion-and-rest in Spinoza's. Within this world we elaborate the orders of space and time; and it is likely, for many reasons, that we separate these orders far too sharply in our usual (and, perhaps, even in our scientific) discourse, ascribing to them a fictitious isolation from and independence of one another. On the other hand, we must also admit that these divisions actually exist in nature, and that our beliefs concerning them, at the worst, do not need more than comparatively slight modifications. For example, even if we are wrong in regarding the length, shape and size of empirically (or, for that matter, of ideally) rigid bodies as a piece of immutable fact irrespective of any set of axes of reference, we are right, none the less, in most of our assertions concerning the standard yard at Greenwich; and if Lorentz and Fitzgerald and Einstein have taught us to accept the possibility of the variations of all lengths in respect of time, these possibilities become critical only when problems of *extrapolation* are in question. Again, granting that our planet and all its creatures are, and are set in, continua of motion, it does not follow that every piece of existence connected with these planetary creatures is itself a motion. Minds might partake in the time which they share with motion without being motions themselves, and this might be the truth even if we *know* time only through observing motion, and even if space without time would be a non-entity. The consequence we are considering would follow only if *every point of space* were temporal in its structure and if *every instant of time*, however occupied, were meaningless in all respects unless space was written clearly on its forehead. In other words, the *general* correlation of space and time, even if it is far more intimate than we commonly suppose, does not involve this special consequence; and so we are at liberty to hold (I think) that there is a very good meaning in the statement that this or that is

extended, and a thoroughly intelligible meaning in the statement that this or that, while unextended, is temporal.

The other point is more directly relevant. Granting that tables are extended, we have to remember that the tables of our common speech can be seen, and touched and heard, upon occasion. When they are seen, they are colored; when they are touched, they are hard; when they are heard, we can guess where the sound comes from. Now, assuming that the table is extended, in what sense is its color, or its hardness, or the sound of it extended? It can be proved, of course, that the spaces presented to vision are not simply identical with the spaces presented to touch, and so that their "common" space, if there is one, is either a construction from them which is not itself included in either or both, or else a contribution of the mind, or else a sort of play-house stage in which both are present and which both appear to fill, although, in fact, each of them occupies different portions of the same area. This type of problem is even more acute in the case of sounds, for although we may invest them with a tag of volume, we do not perceive them to be spread out over an area (for the sound-patterns of certain experiments are not directly perceived in hearing). It is possible, then, that many of the perceptible features of things may occupy portions of an extended volume without themselves being literally extended in any fashion to which we can assign more than a dubious and conjectural meaning; and it may even be true that colors and roughnesses, instead of being extended, are in reality *unextended* properties of extended particles within a surface. If so, the whole surface might appear to be colored or rough because the particles which have these properties are strewn very thickly within it, and the spaciousness of sound might be doubtful because the resonant particles were scattered more sparsely. Mr. Alexander, I think, suggests something of this kind and the reader

will see how often I am thinking of the delightful discussion in his *Space, Time and Deity*, although I do not profess to reproduce either his language or his meaning in detail.

With these explanations, then, we may proceed directly to our problems, and the reader will perhaps agree with me that the heart of the problem is bared in the trite and somewhat colorless formula that the mind is *dynamically* present to the brain, and *cognitively* present wherever the things of which it thinks may happen to be.

This formula, it is plain, assumes provisionally, if not finally, that mind and brain are distinct existences; that the mind can be spatially present, at any rate in its dynamic intercourse, with a part of the world; and, tacitly at least, that the mind can act on the brain (since, otherwise, its dynamic presence would be meaningless). All these assumptions are disputable, and we cannot wholly avoid these disputes. To save time, however, I shall ask the reader not to dismiss these assumptions peremptorily, and to allow that the third of them is true at any rate in the sense that, when the mind is busy, our actions (which the brain controls at least in part) are different from what they would be if the mind were quiescent. If so, we are certainly bound to consider the sense in which the mind may be said to have spatial influence.

We know, of course, that the brain is a spatial thing, extended if anything is extended: and that the experiments which indicate that there is localization of function within the cortex also indicate that this dynamic presence of the mind affects different portions of the brain at different times. The more recent researches of psychologists, however, suggest that we ought to walk exceedingly warily in these affairs. I do not mean, merely, that the first enthusiasm of Ferrier and his friends has given place to the most determined caution, that the crude hypothesis of a

cell for each idea, and association—tracts to connect them, is almost as obsolete in physiology as it is in psychology, or that (as Dr. Jung has recently reminded us in his *Analytic Psychology*) the anatomical museums attached to most of our asylums have proved quite useless for therapeutic purposes. I mean that the whole doctrine of cortical localization may need drastic revision. If Dr. Head and his colleagues are right,¹ the cortex is really concerned with spatio-temporal correlation, and the special senses have their seat in the optic thalamus. If so, the sensory union which is normal perception must involve many portions of the brain in the exercise of its simplest functions; and cortical lesions and the like should be regarded, not as lesions in the place where the mind works in this or the other operation, but as a critical point in the whole nervous circuit which is involved whenever the mind is said to operate in any of these ways.

These perplexities notwithstanding, it is possible to argue, no doubt, that the mind acts somewhere within the brain and spinal cord, and so that it plays its part in a system of strains and stresses which have a definite position like any other field of any other force. Indeed the whole conception of restricted contact at restricted points may be as unnecessary in other departments of causal influence as in this one. On the other hand, the vaguer the connection assigned, the more difficult it becomes to state precisely what the connection is. More particularly, the difference between a spacious mind acting upon a spacious brain, and a spaceless mind doing so, tends to diminish to vanishing point. Indeed, if the mind is admitted to be a distinct existence from the brain, there seems to be no valid argument to prove that the mind itself is spatial, either in a gross obvious sense, or in a cautious subtle sense. The only plausible argument is a fallacy. To the

¹ See e. g., *Brain*, XLI (1918).

unreflective it might seem that anything which acts *at* a point, or *within* an area, must itself be situated, during the time of the action, at that point, or within that area. This idea, however, is only a generalization from our experience of causal transactions in which both partners are spatial. It loses its reasonableness, therefore, when one of the partners is seriously considered to be non-spatial. The idea of a cause is simpler than the idea of a spatial cause, and if a non-spatial thing acts upon a spatial one, what we have is a spatial *effect* upon the spatial thing, and non-spatial *action* on the part of the non-spatial thing.

This conclusion, I think, must stand, unless it can be proved that the mind is not really distinct from the nervous system, but that some form of the identity-hypothesis should be adopted. I shall therefore discuss what seem to me the most important arguments which seek to prove that mind and brain are identical.

It may be argued, then, in the first place, that the mind does precisely the same kind of work as the nervous system, and that this identity of function strongly suggests identity of nature. The work of the nervous system, we are told, is the integration of responses, and the mind has no other office. Bodily response is, firstly, selective, and, secondly, the timely coordination of these selections. Now, it is our nerves, and their appropriate end-organs, that do this work of selecting from the environment. The retina and its nerves react to light and not to sound: the basilar membrane and its neural system of transport do precisely the reverse. These selected stimuli (or, rather, the currents they arouse and continue) are motions of transition which find an outlet in the adaptations of our muscles and glands. They *must* find an outlet, and dare not lose themselves in the void like some Australian rivers. Coordination in the central nervous system simply determines *what* outlet is found and *when* it is found. This is the guiding idea of the

process, and all the facts, we are told, including the facts of mind, fit into it simply and naturally if we examine them without prepossessions. We may trace the hierarchy of these facts from simple reflexes to conceptual thought, passing from the reflexes to subconscious instinct, and thence to conscious instinct and to the inherited and acquired capacities of Styles or Nokes—or Einstein.

Stated in this form, the identity hypothesis has little to commend it except its resolute simplicity. It is useful, indeed, and conformable to the best Greek traditions, to try to define a thing by explaining what it does. Such attempts, however, are only explorations *toward* definition, since different things may often do the same kind of work. If we had good evidence, therefore, that the mind really *is* different from the brain, we should not need to revise our opinion simply because we discovered that frequently it did the same kind of work; and even if we chose to be illogical in this particular we might have the grace to inquire whether the work of the mind really is the same as the work of the brain. In fact, anyone who holds this belief walks by faith and not by sight. He can see, to be sure, that when our minds are directly occupied with the problems of immediate bodily response, they may fairly be said to continue the work of the nervous system, sometimes continuing it better and sometimes worse. At the best, the time of response is judged more nicely, past experience is utilized with a vague suggestion of foresight, and the “all or nothing” principle may be partially suspended in favor of some colorable effigy of economical, graduated exertion. At the worst, we hesitate and are lost, or spoil our action by wondering how the thing is done. But although these similarities of function in this restricted type of mentality are striking enough in themselves they have comparatively little relevance to mind in its infinite faculty. Even if some of our memories and a few of our

expectations could be thrust into this bed of Procrustes, the poet's imagination and the righteous man's endeavors could not; and, although this contrast may not have been evident in the beginnings of mental history, it is well to remember that things have a way of outgrowing their origins and that menials have been known to supplant their masters.

The important question, therefore, is whether we really have evidence that our minds are different from some procession in our nerves; and it is foolish, I think, to deny that, *prima facie*, we have this evidence in the fullest measure, pressed down and running over. True, it may seem extravagant at this hour to maintain, with Descartes, that we know our own minds better than anything else. Most of us, perhaps, know best what interests us most, and many of us are usually interested in other things than our minds. We should not like to be mindlessly connected with those other things, to be sure; for even the least introspective among us has no leanings towards a somnambulist army or an anaesthetised Stock Exchange. Still, many regard the mind as a *sine qua non* which is not very interesting in itself; and we need not credit them with a knowledge or an interest which they do not feel. On the other hand, it is surely most manifest that we are at least acquainted with our own minds, and that we find qualities in them that we cannot observe in other things or in our own brains. Even professors of physiology know their minds better than their brains; and the mass of mankind know nothing of brain and nerves, although they know their own joys and sorrows and conjecturings very well indeed. Our knowledge of these experiences is neither helped nor hindered by any investigations into the seat of the soul, and it makes no odds to us how doctors dispute whether the heart, or the stomach, or the optic thalami, or the frontal lobe of the cortex, or nothing at all, should be regarded as the bearers

of our experience. The identity hypothesis, therefore, so far from being an obvious or simple one, is, on the face of it, the most improbable assumption that anyone could make.

The close alliance between nerves and mind, however, and the strength of the arguments which go to prove that the brain is at least the permanent condition of our intermittent pulses of consciousness, make the identity hypothesis very tempting, and drive philosophers to seek for an indirect proof. The most plausible suggestion in this connection is the view that a man's body (and brain) is what other people can observe of him, while his mind is precisely the same thing, experienced, however, by the man himself. It would be odd, no doubt, if a man's brain from the man's own point of view had a whole world of qualities which cannot be observed by other people; and it would be stranger still if its qualities when privately experienced had not even the faintest analogue of its discoverable properties when it is publicly perceived. For what is observation if it cannot observe things as they are? On the other hand, odd things happen: there are strong grounds for believing that we cannot observe the minds of other people, whereas we can certainly observe their bodies: and if mental properties are supposed to be merely additional to, and not contradictory of, physical ones, there is no absurdity in believing that the facts revealed to these different kinds of observation may have little or nothing in common.

As it seems to me, this way of arguing is more seductive than solid because it is based upon a contrast within experience which does not, in fact, support the identity hypothesis. Whether we have private acquaintance with many parts of our brains or not, we certainly have private acquaintance with many other parts of our bodies. We feel pleasure and thirst and hunger, and no other person can directly observe these bodily facts. In a word, the fact that our organic and kinaesthetic sensations are private,

not public, is the *whole* of the difference between experiencing our own bodily life and observing the bodily life of other people. Now it is clear that organic sensations are logically on the same footing as any other sensations. If I am right in believing that the table is brown because I see it so, I have precisely the same right (and the same duty) to believe that my throat is parched, not merely in the way which a doctor could see, but in the way in which I sense it. And so on any other hypothesis. Organic sensory qualities are spread over the interior of my body as color is spread over the exterior of my table. We have empirical warrant, therefore, for maintaining that organic sensations occupy an area which is identical with the area of the body which others perceive; and we know from experience what the difference is between our bodies from our own point of view and from the point of view of other people. But how do these facts apply to the mind? A sore foot is not a mind, any more than a brown table is, and this contrast of public and private observation does not help the case. If I felt my mind to be within my body I might have a slender justification for the identity hypothesis. Otherwise, what justification is there?

One of the most interesting features of Mr. Alexander's recent discussion of the question is that he makes precisely this claim. The experience of most psychologists, as reflected in their works, is that our minds are not felt to be spatial except in so far as they are felt to be blended with organic sensations in some Cartesian *mélange confus*. Mr. Alexander, however, distinguishes sharply between our mental "enjoyments" (as he calls them) on the one hand, and our organic sensations and bodily properties on the other hand; and yet he argues that these "enjoyments" are spatial and that the identity hypothesis holds.²

² See *Space, Time and Deity*, especially Book I, Chaps. III, IV, and Book III, Chap. I, A, and IV, B.

If these “enjoyments” were felt as spatial, Mr. Alexander’s form of the identity hypothesis would have much in its favor ; and, of course, the mind would be spatial. To the objection that two wholly different things cannot be identical unless one at least is transformed, Mr. Alexander replies that the two are not wholly different, and that the one may really “carry” the other. He does not suppose, it is true, that thinking is only a physiological property. On the contrary, he believes that a new property *emerges* when thinking occurs, so that we have neither brain *and* thought, nor thought which is only a mode of brain. Still, when there is thought, the brain, he says, “carries” a new property which, none the less, is really in it, and, because we “enjoy” our thoughts as spatial, we are justified in believing that our thoughts occur within the brain’s volume precisely as we are justified in believing that our organic sensations have their place within the physical body. *Where* precisely our thoughts are, we need not seek to know more minutely ; and, perhaps, we should not. After all, it is rather foolish to ask whether life is extended, and where precisely it is ; and yet no one denies that extended things are alive. So perhaps they may “mind” as well as live.

Mr. Alexander finds that his mental acts are transitions (or motions) which have “direction” severally, and “structure” conjointly. These transitions, however, are not sensations of movement. The assent of judgment, he tells us, must be sharply distinguished from the nod of the head or the closing of the glottis, and, by the same logic, are even more trenchantly divided from the whole path of the nervous current. “Direction,” therefore appears not to be direction, and “structure” not to be structure ; but Mr. Alexander means, I think, that the pulse of mind is, as it were, a beat of transition epitomising a whole movement in itself ; and this beat of transition might “carry” mind

even if it were but the moment of passage at a synapse, as a well-known theory declares.

I must confess that I cannot find this spatial character in my own "enjoyments"; and I am in excellent company. The empirical fact of connection between mind and body (which, in some sense, is indisputable) seems to me to express all the observable data in the case, and this fact of connection may obviously be interpreted in a great many ways. It must be admitted, however, that Mr. Alexander's theory would probably be the simplest and the best if he were right in his view that all thinking is a species of "conation," and if "conation" were simply what he describes.

A conation, Mr. Alexander thinks, is just a movement, the kind of movement which a mind makes. Such a movement is practical when it issues in muscular action, speculative when it stops short of this and is either arrested or else diverted in some other direction, e. g., to the making of words. This contention, however, is surely most disputable and most improbable. Speculation, I think, may continue without any arrest or diversion of action; but, even if were not so, it would not follow that speculation is nothing but these. Again, if the conation really were diverted, one would suppose that it would become a different conation, and thus that the speculation which epitomizes it would become different also. For example, we know very well what it is to pass from fisticuffs to verbal abuse. It is but metaphor to say that verbal abuse is speculative fisticuffs. And yet there is no genuine difference between this metaphor and the other metaphor which states that thinking is an action diverted into word-making. We know that kind of diversion; and we do not identify it with what it is not. Moreover, an arrested conation is in no better case than a diverted one. We know what baulked or inhibited conation is, and we do not identify it with thinking. Indeed, even if these arguments were unavailing,

it would seem, nevertheless, that Mr. Alexander's theory brings him into a very strange harbor. If our thinking were virtual action in the literal sense (i. e., the beginning of an action which we experience in its incipience) we might admit the validity of his interpretation provided that this incipient action were restricted to the places that such action could reach. On Mr. Alexander's theory, however, these incipient conations (which are literally within our heads) *are* our knowledge of the world outside us. They are our direct perception of a nine-year-old Sirius, our direct acquaintance in memory with our college festivals and our childhood's games. According to the theory, therefore, these conations reach the borders of the stellar universe, and they may extend into an earlier century.

It seems incredible that these powers could belong to a movement wholly enclosed within the brain, and it would plainly be far simpler to suppose that the mind, in a certain sense, is dynamically (or at least physically) present wherever it is cognitively present. This theory, in some form or other, has also been mooted very seriously in recent times; and so it calls for comment.

Let us take an analogy. When there is no light, things have no color; when light illuminates them, they are colored. Why should we not suppose, in the same way, that things are soulless when the mind passes them by, and that they are conscious when the mind reaches them? It would not be necessary to suppose that consciousness does anything to the things except to reveal them. Things do not reveal themselves simply because they exist, and this new and wonderful quality is a sufficiently large difference for even a mind to make. If, then, we regard the mind as a light playing upon things, there is no difficulty in believing that it is literally present at every point in space where, as we say, it is cognitively present.

The form in which this theory is commonly presented

is somewhat different from the possibility which I have sketched above. The doctrine is usually stated as if it could dispense with consciousness altogether, and as if what we call consciousness were only an aspect of things. Such an interpretation plainly rejects the very analogy on which it climbed. It speaks as if sections of things could be illuminated without any light to illuminate them, or as if "being" and "being revealed" were one and the same. There is little advantage, I think, in considering any theory which has such an aching gap in it, and so I shall deal with this hypothesis in the more plausible form in which I have stated it.

If the mind is really spatial, this theory seems to me to give by far the most promising account of its spaciousness. It seems reasonable to hold that the mind literally inhabits the whole area which is bounded by its perceptual horizon at any given time. When it perceives the sun from the earth, it may be at the sun and at the earth and it may even span the intervening millions of leagues. When, as we say, we are in Dover listening to the guns at Zeebrugge, the truth may be that our minds are in Zeebrugge as well as in Dover; and, perhaps that they stride across the Channel. And so of the other senses. Perhaps, even, it would be possible to maintain that the mind may literally be present at places with which it has only a conceptual acquaintance, although, in that case, there would be little meaning in supposing it to occupy the intervening positions. Indeed, we could scarcely accept this idea unless we supposed that thinking of a thing at the back of our heads (in its visual character) were the same as seeing it before our eyes. Still, peaks may glitter in an expanse which is itself dark; and, similarly, scattered patches in the boundless expanse of the universe may be revealed for a moment while their surroundings may not be revealed. The status of images would present no difficulties on this interpretation, since

images may plausibly be regarded as portions of perceptible things whose surroundings are not perceived or, if the reader prefers, as half-recollections emancipated, for the time being, from the perceived order of space and time.

It would not be impossible to account for, or at least to include, the rôle of the body according to this hypothesis. The body, on the theory, would be perceived or revealed, broadly speaking, like any other physical object; but it would have a peculiar importance among revealed things, and it would very easily come to be regarded as the true and proper habitation of the mind. The horizon of sight or of hearing, to be sure, is indefinitely larger than the horizon of the body, but most of the other external senses cannot stray very far from the body, if indeed, like heat and cold and perhaps touch, they are not restricted to the surface of the epidermis. Now, when we are conscious, we do not always see or hear, and the only external things of which we are constantly aware are the warmth or coolness of the atmosphere and the pressure on our skin. Again, we are constantly aware of our organic sensations, and these, as we have seen, have their place within the body. The body therefore, to use Berkeley's phrase, is a "tunicle of the soul" in a sense in which nothing else is. It is not the soul's only garment, but it is the only constant one. We carry our organic sensations along with us as we move from scene to scene; we interpret our muscular sensations as indications of the position of things; if we see anything, we see it from the place where we feel our limbs. In a word, the place of our bodies is *always* our place, and no other place is *constantly* ours. The very illusions of personal identity bear witness to the same truth. A well-worn garment may seem to be part of *us*; a new one never does; and any abrupt change in the mass of our private "vital" sensations makes us doubt our identity and may even con-

vey us to a madhouse because we think we have become brittle and therefore dare not move.

To be sure, the problem of the difference between cognitive and dynamic presence would still remain, but the sting of it might be drawn. We have no reason to believe that we act upon the sun when we see it—there are very few who have dreamt of this telekinesis—but we have every reason to suppose that we can act upon our bodies, and that these, in their turn, can manipulate things. It is not absurd to conjecture, however, that only certain things respond to the contact of minds (except in the way of revealing themselves), whereas the nerves of the body respond in other ways, and set the muscles working. Selective action of this kind on the part of physical nature is not at all unusual, and if we chose to be fanciful we might even imagine that our minds (within narrow limits) have learned how to make use of the nerves, and have been too lazy, or too stupid, or too indifferent to learn how to affect anything else.

It seems to me, therefore, that this theory gives by far the best description of the place of the mind, if the mind indeed has a place; and, personally, I should accept it without hesitation or reservation if I saw any good reason for believing that the mind is spatial at all.

What I find to be spatial by direct inspection are the colors, sounds and smells which I perceive outside my body, and the toothache, muscular sensations, and the like which I find within it. These sensory data are the elements of the perceived spatial world; and we know of no others. It is true that imaged and remembered things, dream spaces and recollected places, are also spatial; but their elements, as has been hinted, are borrowed from the perceived world; and it is not impossible to admit their spatiality, and yet to deny consistently that there is any empirical spatial world other than the world of perception. To speak of the

perceived world, of course, does not imply that this world is exhausted in any one's perception, or that it is opposed in its essence to conceptual space. What is meant is that parts of it are given directly in perception, and the rest pieced together, expanded (and winnowed) by reflection.

While this, I think, is true, it is of course impossible to *demonstrate* that the mind is non-spatial. The arguments which seek to prove this conclusion are, without exception, bad ones. Thus it seems very certain to most of us that we can think of many things (numbers, for instance) which are not themselves spatial; and hence we might rashly conclude that these thoughts, at all events, are non-spatial. That is a fallacy however; for the thoughts might be spatial, although their objects are not, just as thoughts are plainly temporal although their objects need not be. Or, again, we may be warned against confusing between the delight in good literature, let us say, and the "somatic resonance" (or the organic sensations) which normally accompany this delight. This warning is just, for these emotions are not identical with the organic sensations, but, although different, they might still be spatial. Personally, I think they are not; but if any philosopher says that they feel spatial to him, it is impossible to prove to him, on general grounds, that he must be mistaken.

What I have sought to prove is something less than this. My point is that, *unless* we are assured by direct inspection that our minds are spatial in their essence, we have no good reason for supposing so, on the ground of general theory. Indeed I think that the weight of general argument is against the spatiality of the mind, and I shall conclude by giving my reasons for this opinion.

The most distinctive features of the human mind, I think, are its sentiments and its logic. Now the sentiments play upon the whole gamut of the emotions, ringing out a response according to the condition of the thing towards

which the sentiment goes out. To use the stock illustration, the mother is alarmed when the child is in danger, tranquil when it is safe, tender towards it at every time. I cannot see that this relationship of the emotions is spatial in any sense worth the name, and yet it is this very relationship which is the distinctive way in which the emotions of the mind are organized; and I do not see that any adjacency of nerves could give the slightest hint towards an explanation of this relationship. The case of logic is even stronger. However illogical from a strict academic standpoint the mass of mankind may be, still, men try to think. Even the Bushmen do, although they cannot count up to ten. And what has space to do with logic? Is there not an impassable gulf between the search for identity of characteristics and any sort of spatial conjunction? Let us suppose, *per impossibile*, that logically correct inferences always follow one set of channels in the brain, and illogical ones another. Suppose, even, that the path of these processes could be mapped out, and that teachers of logic could show the chart to their pupils. Would that *explain*, or help to explain, what logic is, or how it satisfies? There does not seem to be even the rudiments of an explanation on lines such as these.

Those who have attempted in the past to weld psychology and physiology into one have commonly argued as if the whole problem were summed up in the coherence of motions in the brain, of the one part, and the association of ideas, of the other part. It is unnecessary nowadays to show that the association of ideas is only a small part of psychology; but even if association were the whole of psychology, one might venture to ask how the spatial paths in the brain could account for anything in this vain theory, fondly invented, except association by contiguity. If A has been experienced along with B, the revival of A might readily arouse B by mere spatial irradiation into contigu-

ous paths. On the other hand, irradiation of this or any other kind could never teach us to detect similarities of character, or to think according to that fashion. And without similarity, where would association be?

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